

• NOTICES •

Japan Patent Office is not responsible for any damages caused by the use of this translation.



RECEIVED

JUL 17 2003

GROUP 3600

TEANS

[Means for Solving the Problem] Steering wheel rodding of this invention solves the above-mentioned technical problem by the following composition.

[0006] The ring section is united with the boss section / spoke section joint object for steering wheel rodding. In the steering wheel wrapped with leather cord with which the ring section and the ring section connection side spoke section are covered in a macromolecule elastic body layer, and leather winding is further carried out While bending is carried out while the ring section leaves the rib section of an extrusion metallic pipe with a rib and is pierced { section } in the piece of spoke connection, and a coupling hole is formed in the piece of spoke connection The piece of spoke connection is connected with the spoke section through the die-casting support-from-under section, and a macromolecule elastic body layer is characterized by what is formed with the macromolecule elastic body sheet.

[0007]

[Embodiments of the Invention] Hereafter, 1 operation gestalt of this invention is explained in detail.

[0008] (1) The rodding 11 of the steering wheel wrapped with leather cord used for this example has the following composition.

[0009] The ring section 13 is united with boss section 12 / spoke section 23 joint object, and in the rib section 17 of the extrusion metallic pipe 15 with a rib as the ring section 13 shows to [drawing 1](#), while the steering wheel rod 11 leaves and is pierced, bending of it is carried out [piece / 19 / of spoke connection] (refer to [drawing 2](#)). By the composition concerned, the rate of stock utilization is also good in the ring section 13, and both, since [which becomes processible, without increasing a production man day] the ring section 13 is substantially formed by the metallic pipe, it contributes to the lightweight-ized design of a wheel.

[0010] Although the back is available for the above-mentioned punching processing before carrying out bending to the shape of a ring or, positioning of the piece 19 of spoke connection is easy for the direction of back, and it is desirable. Moreover, although steel or aluminum is sufficient as the quality of the material of a metallic pipe, the standpoint of lightweight-izing to its aluminum is desirable.

[0011] Next, while coupling-hole 19a is formed in the piece 19 of spoke connection, the piece 19 of spoke connection is connected with the spoke section 23 through the die-casting support-from-under section 21. Mechanical combination of the piece 19 of spoke connection and the die-casting support-from-under section 21 is carried out by existence of coupling-hole 19a, and predetermined bonding strength is collateralized among both by it.

[0012] Die casting of the 1 operation gestalt of the die-casting support-from-under section 21 shown in drawing 23 is really carried out with the boss spoke connection section 27 and the spoke section 23 by considering the boss section 12 as an insertion. Although the production man day of rodding is reducible as compared with the operation gestalt of following drawing 4 in this composition, a weight increases.

[0013] In this operation gestalt, since the ring section connection side spoke section 24 of the spoke section 23 is made into the bulge gestalt, if this section is made solid, since a weight will increase, the die-casting section is set to *****24a, and inlaw fitting of this ***** 24a is carried out with the lid 25 made from plastics, such as a polyamide and ABS. In addition, support rib 25a is formed in the lid 25 for gestalt maintenance.

[0014] Further Between the die-casting support-from-under section 21 and the ring section 13, it is desirable to also stuff too the crevice made to the upper and lower sides of the piece 19 of spoke connection by the piece 26 of the final stage made from plastics like the example of drawing.

[0015] While spoke section 23A is formed by the plate, as for other operation gestalten of die-casting support-from-under section 21A shown in drawing 4, coupling-hole 23a for the die-casting support-from-under sections is formed at the nose of cam of spoke section 23A. In addition, although not illustrated, usually, spoke section 23A is press working of sheet metal, and with the boss spoke connection section 27, punching processing is carried out and it is united with the boss section by welding. Moreover, like the operation gestalt of above-mentioned drawing 21, although the crevice 20 is formed in the upper and lower sides of the piece 19 of spoke connection between the ring section 13 and die-casting support-from-under section 21A, since the crevice 20 concerned is small, it is not packed by the piece of the final stage like ****.

[0016] (2) Cover the ring section 13 and the ring section connection side spoke section 24 (24A) with the macromolecule elastic body layer 31 currently formed with the macromolecule elastic body sheet in the above-mentioned rod 11 (11A), respectively. By forming the macromolecule elastic body layer 31 with a macromolecule elastic body sheet, a production cost is reducible as compared with the case where the macromolecule elastic body layer 31 is formed, with the reaction-injection-molding (RIM) urethane as which an expensive forming facility and the expensive cost of materials are required. Directly, leather winding is not carried out to rod 11, but the macromolecule elastic body layer 31 is minded for making soft a feeling of a feel wrapped with leather cord. In addition, as for this composition, drawing 23 and the operation gestalt of the both sides of drawing 4 are common.

[0017] As a formation material of the above-mentioned macromolecule elastic body sheet, thermoplastic elastomer, such as rubber material, such as chloroprene rubber (neoprene), an ethylene propylene rubber, etc. with good weatherability, other olefin systems, and a polyvinyl chloride system, etc. can be mentioned. Chloroprene rubber is [among these.]

desirable from the adhesive standpoint over weatherability and rodding (metallic pipe).

[0018] A macromolecule elastic sheet is pierced in the shape of [which can surround the ring section 13 and the ring section connection side spoke section 24 (24A)] an extensive form, is stuck on the ring section 13 and the ring section connection side spoke section 24 (24A) through an adhesives layer (for example, chloroprene system), and let it be the macromolecule elastic body layer 31.

[0019] Furthermore, the leather pierced in the abbreviation similarity configuration as the macromolecule elastic sheet is laid on top of the macromolecule elastic body layer 31 in the ring section 13 and the ring section connection side spoke section 24 (24A), and the layer 33 wrapped with leather cord is formed. Under the present circumstances, although hand-sewing is sufficient, leather winding may be used together, using adhesives and may be performed.

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] As for this invention, steering wheel rodding is related with the steering wheel wrapped with leather cord by which the ring section is united with the boss section / spoke section joint object, the ring section and the ring section connection side spoke section are supported from under in the macromolecule elastic body covering section, and leather winding is carried out further.

[0002]

[Description of the Prior Art] According to the request of diversification and upgrading of a steering wheel, the request of a steering wheel wrapped with leather cord has been increasing also in a popularly-priced car these days.

[0003] However, the conventional steering wheel wrapped with leather cord turned into it with cost quantity in order to perform leather winding to the steering wheel which is the original high-class specification which carried out macromolecule elastic body covering by reaction-injection-molding (RIM) URE. Generally as for RIM urethane, an installation cost and the cost of materials increase. Under the present circumstances, since steering wheel rodding ("wheel rodding" may be called hereafter) by which die-casting fabrication of all, i.e., the boss spoke connection section, the spoke sections, and the ring sections other than the boss section was carried out had been used with the improvement in a performance of the standpoint of productivity, a die-casting metal, etc. as rodding, there was also a problem of weight increase of a steering wheel.

[0004] In view of the above, this invention does not need to form a macromolecule elastic body enveloping layer with RIM urethane, and aims at offering the steering wheel wrapped with leather cord with which a lightweight-ized design moreover becomes easy.

[0005]

[Means for Solving the Problem] Steering wheel rodding of this invention solves the above-mentioned technical problem by the following composition.

[0006] The ring section is united with the boss section / spoke section joint object for steering wheel rodding. In the steering wheel wrapped with leather cord with which the ring section and the ring section connection side spoke section are covered in a macromolecule elastic body layer, and leather winding is further carried out while bending is carried out while the ring section leaves the rib section of an extrusion metallic pipe with a rib and is pierced [section] in the piece of spoke connection, and a coupling hole is formed in the piece of spoke connection. The piece of spoke connection is connected with the spoke section through the die-casting support-from-under section, and a macromolecule elastic body layer is characterized by what is formed with the macromolecule elastic body sheet.

[0007]

[Embodiments of the Invention] Hereafter, 1 operation gestalt of this invention is explained in detail.

[0008] (1) The rodding 11 of the steering wheel wrapped with leather cord used for this example has the following composition.

[0009]

o

o

6

↓ See
pg 1
after
here

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

TECHNICAL PROBLEM

[Description of the Prior Art] According to the request of diversification and upgrading of a steering wheel, the request of a steering wheel wrapped with leather cord has been increasing also in a popularly-priced car these days.

[0003] However, the conventional steering wheel wrapped with leather cord turned into it with cost quantity in order to perform leather winding to the steering wheel which is the original high-class specification which carried out macromolecule elastic body covering by reaction-injection-molding (RIM) URE. Generally as for RIM urethane, an installation cost and the cost of materials increase. Under the present circumstances, since steering wheel rodding ("wheel rodding" may be called hereafter) by which die-casting fabrication of all, i.e., the boss spoke connection section, the spoke sections, and the ring sections other than the boss section was carried out had been used with the improvement in a performance of the standpoint of productivity, a die-casting metal, etc. as rodding, there was also a problem of weight increase of a steering wheel.

[0004] In view of the above, this invention does not need to form a macromolecule elastic body enveloping layer with RIM urethane, and aims at offering the steering wheel wrapped with leather cord with which a lightweight-sized design moreover becomes easy.

[Translation done.]

• NOTICES •

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

EFFECT OF THE INVENTION

[Function and Effect of the Invention] The steering wheel of this invention wrapped with leather cord does so the following operation and effects by composition in which the macromolecule elastic body layer is formed with the macromolecule elastic body sheet.
[0021] While the ring section leaves the rib section of an extrusion metallic pipe with a rib and piercing the piece of spoke connection, bending is carried out, while a coupling hole is formed in the piece of spoke connection, the piece of spoke connection is connected with the spoke section through the die-casting support-from-under section, and lightweight wheel rodding can be manufactured to productivity fitness.

[0022] Moreover, since the macromolecule elastic body layer used as a ground layer wrapped with leather cord was changed into the conventional RIM urethane covering section and was formed with the macromolecule elastic sheet, the expensive forming facility and the expensive cost of materials like RIM urethane are not required, but a production cost can be cut down.

[0023] That is, the steering wheel of this invention wrapped with leather cord does not need to form a macromolecule elastic body enveloping layer with a RIM urethane foam, and, moreover, it becomes easy to lightweight-sized design it.

[Translation done.]

• NOTICES •

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The ring section is united with the boss section / spoke section joint object for steering wheel rodding. In the steering wheel wrapped with leather cord with which the aforementioned ring section and the ring section connection side spoke section are covered in a macromolecule elastic body layer, and leather winding is further carried out. While bending is carried out while the aforementioned ring section leaves the rib section of an extrusion metallic pipe with a rib and is pierced [section] in the piece of spoke connection, and a coupling hole is formed in the aforementioned piece of spoke connection. The steering wheel wrapped with leather cord characterized by what the piece of spoke connection is connected with the spoke section through the die-casting support-from-under section, and the aforementioned macromolecule elastic body layer is formed for with the macromolecule elastic body sheet.

[Claim 2] The steering wheel wrapped with leather cord characterized by really carrying out die casting of the aforementioned die-casting support-from-under section with the boss spoke connection section and the spoke section by considering the boss section as an insertion in a claim 1.

[Claim 3] The steering wheel wrapped with leather cord characterized by forming the coupling hole for the die-casting support-from-under sections at the nose of cam of this spoke section in a claim 1, while the aforementioned spoke section is formed by the plate.

[Translation done.]